

## 419D-Pen

Our 419D Overcoat Pen are solder resist coatings based on the IPC-CC-830B and UL 94-V0 certified our 419D acrylic resin systems. They are a fast drying, xylene and toluene free product that provides an excellent finish in multiple colors. They are ideal for high moisture environments and applications requiring easy repair and rework.

The 419D pen protect area of a printed circuit board from taking solder, helping confine solder to intended areas only. This helps prevent to formation of unintentional solder bridges, which could cause short circuits. It also protects electric circuits against moisture, dirt, dust, thermal shocks, and scratches that could corrode, or otherwise damage the electric components. It insulates against high-voltage arcing, shorts, and static discharges.



The 419D pen improves reliability, operational range, and lengthens the life of electrical and electronic components and assemblies. Its primary applications are in the automobile, marine, aerospace, aviation, communication, instrumentation, industrial control equipment, and consumer electronics industries.

### Features & Benefits

- **No Hazardous Air Pollutants**—free of toluene or xylene
- **Excellent finish**—smooth, homogeneous, and durable
- **Protects electronics from moisture, corrosion, fungus, and static discharges**
- **Easy rework and repairs**—removable with Cat. No. 435, 4352 thinner or Cat. No. 8310 stripper
- **Comes in variety of colors**—blue, black, clear, green, and white

### Available Sizes

Catalog Number	Color	Form	Net Volume	Net Weight	Shipping Weight
419D-P-BK	Black	Pen	5 mL [0.17 fl oz]	4.6 g [.16 oz]	0.27 kg [0.60 lb]
419D-P-BL	Blue	Pen	5 mL [0.17 fl oz]	4.6 g [.16 oz]	0.27 kg [0.60 lb]
419D-P-CL	Clear	Pen	5 mL [0.17 fl oz]	4.6 g [.16 oz]	0.27 kg [0.60 lb]
419D-P-GR	Green	Pen	5 mL [0.17 fl oz]	4.6 g [.16 oz]	0.27 kg [0.60 lb]
419D-P-WH	White	Pen	5 mL [0.17 fl oz]	4.6 g [.16 oz]	0.27 kg [0.60 lb]

### Technical Data

Physical Properties - Cured	Test Method	Value
Color	Visual	Crystal Clear
Solderability		Excellent
Weather Resistance		Excellent
Fungus Resistance	IPC-TM-650 2.6.1.1	Pending
Flexibility	IPC-TM-650 2.4.5.1	Pending
Flammability	UL Registered <a href="#">E203094</a>	94V-0
Electric Properties - Cured	Test Method	Value
Dielectric Withstand Voltage	per IPC-TM-650	>1500 V
Insulation Resistance (after 24 hours)	IPC-TM-650 Test 2.6.3.4	1 x 10 <sup>12</sup> Ω
Physical Property - Uncured	Test Method	Value
Odor		
Viscosity @ 23°C/73°F	Brookfield SP1	100 cP [0.10 Pa·s]
Density	ASTM D 1475	0.92 g/ml
Flash Point	Closed Cup	-3 °C [26 °F]
Boiling Point		≥80 °C [≥176 °F]
Solids Content (w/w)		29.5%
Curing & Work Schedule		Value
Tack Free		10 to 15 min

Recoat Time	2 to 3 min
Full Cure (at room temp.)	24 h
Full Cure (at 65°C /149°F)	60 min
Shelf Life	3 year
Storage Temperature Limits	-5 to +40 °C [+23 to +104°F]
Service Ranges	Value
Service Temperature	-65 to 125 °C (-85 to 257°F)
Maximum coverage per US gallon	≤286 000 cm <sup>2</sup> [≤308 ft <sup>2</sup> ]

## MSDS

### Available SDS:

#### English

- [Black](#)
- [Blue](#)
- [Clear](#)
- [Green](#)
- [White](#)

## Usage Instructions

Follow the procedure below for best results.

#### To apply the liquid pen

1. For best results, ensure that the surface to be coated is clean and oil-free.
2. Shake the pen vigorously to ensure good flow quality.
3. Touch pen lightly on the surface while squeezing the barrel to apply thin and even coat.
4. Let dry for 3-5 minutes (flash off time) at room temperature before handling.

#### To cure at Room temperature

- Let air dry 24 hours

#### To accelerate cure by heat

- After flash off, put in oven or under heat lamp at ≤65 °C for 60 min.

**Note:** Coats that are very thick require more time to dry.

**Attention!** If heat curing, do not exceed 65 °C as this may cause surface defects due to solvents evaporating off too quickly.

### Related Products

[Thinner 2 \(4352\)](#)

[Conformal Coating Stripper \(8310\)](#)

[Safety Wash II Aerosol \(4050A\)](#)

[Safety Wash Liquid \(4050\)](#)

[Superwash Electronics Cleaner \(406B\)](#)

[Isopropyl Alcohol \(824\)](#)